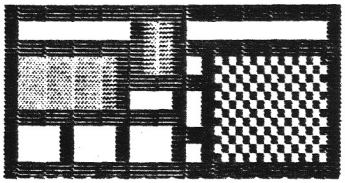
SYNAPSE

VOL.2 NO.12 Robert F. Heil, Jr., Editor DEC.,1984

THE CENTRAL PENNSYLVANIA TIMEX/SINCLAIR COMPUTER USERS GROUP

PAINT!



Dennis J. Krill

Program by : Phil Doughty

You don't think you can do a Mondrian style picture on your TS 1000/1500/2068? Or a computer stylized portrait?

Look no further, 'cause paint can help you in your artistic endeavors.

There have been many drawing programs published in the books and magazines. But "PAINT" goes them one better since you can change the brush graphic in the middle of a drawing.

"PAINT" was written by Phil Doughty of VIDIOM, P.O. Box 3118 Providence, RI 02906. VIDIOM sells a super scrolling message display program that is worth looking into.

Phil's program and comments follow:

```
  10 REM PAINT
  11 REM PHIL DOUGHTY
         VIDIOM
         P.O. BOX 3118
         PROVIDENCE, RI 02906
  15 LET Z=0
  20 LET X=5
  30 LET Y=5
  35 INPUT S$
  40 PRINT AT Y,X;S$;
  50 IF Z THEN PRINT AT Y,X;" ";
  60 IF INKEY$="5" AND X>0 THEN
LET X=X-1
  70 IF INKEY$="8" AND X<31 THEN
 LET X=X+1
  80 IF INKEY$="6" AND Y<21 THEN
 LET Y=Y+1
  90 IF INKEY$="7" AND Y>0 THEN
LET Y=Y-1
 100 IF INKEY$="0" THEN LET Z=NO
T Z
 115 IF INKEY$="C" THEN GOTO 35
 120 GOTO 40
9998 SAVE "PAINT"
9999 RUN
```

"PAINT" IS A DRAWING PROGRAM THAT OFFERS THE OPPORTUNITY TO CHANGE THE CHARACTER WITH WHICH YOU ARE PAINTING.

THE INPUT CURSOR ASKS WHAT CHARACTER YOU CHOOSE TO USE. PICK A SYMBOL AND PRESS ENTER. (TWICE IF IN GRAPHICS MODE). YOUR CHOICE APPEARS ON THE SCREEN AND MAY BE MOVED BY THE ARROW KEYS.

PRESSING "0" CAUSES THE PAINT BRUSH TO FLASH AND MAY BE USED AS AN ERASER OR TO MOVE THE BRUSH WITHOUT PAINTING.

PRESS "C" TO CHANGE THE COLOR OF YOUR PAINT.

STRINGS OF MORE THAN ONE CHARACTER MAY BE INPUT FOR WIDE VERTICAL BRUSH STROKES.

To send your finished artwork to the printer, just press BREAK and then COPY the screen. Just be sure that you are finished before sending the picture to the printer, because it might not be on the screen after you come back. I lost a few pictures that way and have been unable to figure out how to retain the screen after printing. If any of you find a method to bring back the drawing please write to us at **SYNAPSE**.

If you find you have trouble drawing, try this method. Have a copy of a simple picture or photograph made on a clear transparancy material. Any photocopy center should be able to make one. One word of caution: the copy might have to be enlarged or reduced to fit your screen. To use the transparancy, tape it over the screen and trace it with the cursor.

Draw away.

FROM THE MAY 1984 ISSUE OF CATS NEWSLETTER (CAPITOL AREA TIMEX/SINCLAIR USERS GROUP)

From the Editors Desk

I would like to apologize to all of the subscribers for the size of the last issue. I had intended it to be a double issue in not only name but in content also. In the rush to get the issue out to you I created a single issue with a double month title. To make ammends all current subscriptions are given an extra month. In the future I will be more carefull!

A reminder to all of the exchange newsletters: Feb 1, is still the start date for reprinting select articles from your newsletters! If no one responds for or against my doing this, I will assume that I have the OK to reprint with discretion. Your publication and the author will get proper acknowledgement!

Rumor has that Sinclair was looking at G Russel Electronic's ROMSWITCH. Bill Russel could not shed light on why this might be, but in light of the fact that Sinclair wants to come back into the US with it's computers, this may be a silent approval of Bill's device. Not long after asking to examine the Romswitch there began the rumor that Sinclair was releasing their software to the US. It may just be coincidence, it may be silent approval of the ROMSWITCH, interpret it as you will. It does mean that the picture for us die-hard Timex/Sinclair users is beginning to look better. If anyone has more information on these developments please let me know. I'll share it with our readers.

In the coming issues I will begin to do a series of articles on MSCRIPT and how to alter, interface, and use this wordproccessor to your best advantage. There will begin to appear reviews of British software, with various rom emulators around there is no reason why you can not have the best of two continents to run on your computer. The one thing that there seems to be a shortage of, however, is public domain programs that may be published and passed on to the many owners of the Timex machines. Please share with us your programs, see your name in print!

Subscriptions: $12.00/year
back issues: $1.25 each

Ads: 1/8 page: $7.00
1/4 page: $10.00
1/2 page: $18.00
full page: $30.00
classified $1.00 per line of 32 characters.
personal: free to members, 2 lines of 32 characters each.

TRY THIS PROGRAM ON YOUR TS2068:

```
20 PRINT "Enter four numbers
   between 1 and 20."
30 INPUT a,b,c,d
35 CLS
40 LET t=0
80 LET x1=125+125* SIN (a*t)
60 LET y1=87+87* *IN (b*t)
70 LET x2=125+125* SIN (c*t)
80 LET y2=87+87* SIN (d*t)
90 PLOT x1,y1
100 DRAW x2-x1,y2-y1
110 LET t=t+.01
120 GOTO 50
```

TIMEX-SINCLAIR Software/Hardware
(2068-1000 ****** SPECTRUM-1000)
* SMART II Modem software..$23.88
* ROMSWITCH for 2068 - lets your 2068 run SPECTRUM programs $49.88
* 2068 PINBALL CARTRIDGE...$19.95
* VU-FILE/VU-CALC/VU-3D-ea.$15.95
* Many SPECTRUM Titles below $20.
* 2068 MICRO-DRIVE SYSTEM.$189.88
* Send a 2 stamp LSASE for our complete catalog !!
*** SUM-WARE ***
810 Mammot ALDEN NY 14004

```
*********************************
*          *                    *
* *        ASTRONOMER    *      *
*     *                *      *
*********************************
```

PROGRAM : ASTRONOMER
FOR : SPECTRUM MODIFIED 2068
BY : CP SOFTWARE
2 GLEBE ROAD
UXBRIDGE
MIDDLESEX UB8 2RD
ENGLAND

CONTACT : RUSSELL ELECTRONICS
CENTRE HALL, PA

*****

WHAT STARS WILL I SEE TONIGHT (OR ANY NIGHT), AND WHICH CONSTELLATIONS ARE IN A PARTICULAR PART OF THE SKY?

*****

WHERE IS THE PLANET MERCURY? HOW WILL IT RELATIONSHIP TO EARTH CHANGE IN THE COMING MONTHS?

*****

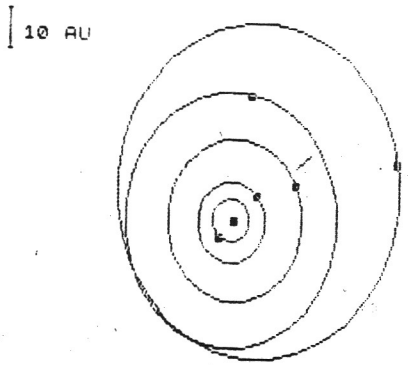
WHAT TIME WILL THE SUN RISE TOMORROW, AND WHAT PHASE IS THE MOON?

*****

WHERE IS HALLEY'S COMET AT THE MOMENT, AND WHEN WILL BE THE BEST TIME TO SEE IT?

THESE ARE THE KIND OF QUESTIONS 'ASTRONOMER' WILL TACKLE FOR YOU, CALCULATING, DISPLAYING ON SCREEN AND MAKING HARD COPY TO A TS2040 PRINTER.

DON'T WORRY IF YOU KNOW NEXT TO NOTHING ABOUT ASTRONOMY, BECAUSE THE DOCUMENTATION - A 16 PAGE, THOROUGHLY AND CLEARLY WRITTEN - WILL TAKE YOU THROUGH A DEMONSTRATION THAT WILL SHOW YOU SKY PLOTS, CALCULATIONS AND HOW TO ALTER LONGITUDE AND LATITUDE FOR ANY LOCATION ON THE PLANET EARTH. THERE IS ALSO AN ANIMATION SEQUENCE THAT ILLUSTRATES THE POSITIONS OF THE INNER AND OUTER PLANETS OF OUR SOLAR SYSTEM STARTING FROM THE DATE YOU SPECIFY.



84.82

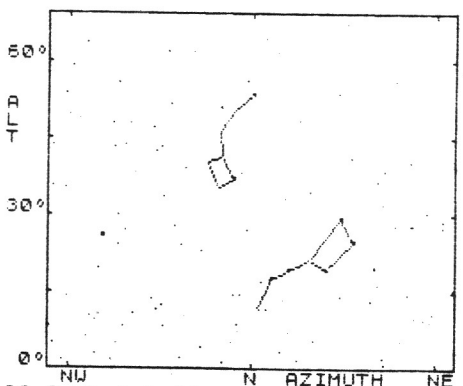
'ASTRONOMER' IS ALSO CAPABLE OF TRACKING TWO COMETS - HALLEY'S AND ENCKE'S. BELOW IS A CHART BASED ON LONDON LONGITUDE AND LATITUDE THAT INDICATES THE APPROACH AND PROXIMITY OF HALLEY'S COMET :

HALLEY'S COMET

date	RA h	m	s	Dec °	'	"	Dist AU
1- 9-85	5	56	35	+23	54	32	1.9
11- 9-85	6	3	42	+25	6	49	1.7
21- 9-85	6	10	39	+27	0	28	1.5
1-10-85	6	17	59	+30	33	29	1.3
11-10-85	6	29	21	+39	46	13	1.2
21-10-85	13	43	29	+81	1	2	1.0
31-10-85	17	59	58	+ 4	36	3	1.0
10-11-85	18	3	10	- 8	36	8	1.0
20-11-85	17	57	15	-13	35	2	1.1
30-11-85	17	45	51	-16	43	25	1.3
10-12-85	17	31	58	-19	13	29	1.4
20-12-85	17	18	33	-21	23	44	1.6
30-12-85	17	6	23	-23	23	11	1.8
9- 1-86	16	54	32	-25	19	10	1.9
19- 1-86	16	41	22	-27	17	26	2.0
29- 1-86	16	24	46	-29	21	18	2.2
8- 2-86	16	1	58	-31	29	18	2.3
18- 2-86	15	29	35	-33	28	46	2.4
28- 2-86	14	44	22	-34	44	26	2.5
10- 3-86	13	46	50	-34	14	51	2.5

AS YOU CAN SEE, THE COMET WILL BE CLOSEST TO US DURING THE LAST WEEK OF OCTOBER AND FIRST WEEK OF NOVEMBER, 1985. LET'S HOPE FOR CLEAR SKYS.

'ASTRONOMER' WILL ALSO PLOT THE STARS FOR ANY GIVEN LOCATION IN ONE OF FIVE SKY SECTORS. ONCE THE STARS HAVE BEEN PLOTTED, YOU CAN CALL FOR THE DELINEATION OF SPECIFIC CONSTELLATIONS OR FOR ALL THAT WILL BE VISIBLE. THAT CHART CAN BE DUMPED TO THE PRINTER AS WELL.



23:0 on 1-1-84

'ASTRONOMER' SHOULD SATISFY THE CURIOUS, AMATEUR AND EXPERT ALIKE. IT IS ALSO ANOTHER PROGRAM THAT DEMONSTRATES JUST HOW POWERFUL THE SINCLAIR BASED MACHINES CAN BE WHEN PROPERLY PROGRAMMED.

****
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GOLFING WORLD

FOR : THE SPECTRUM MODIFIED 2068
BY : CP SOFTWARE

GOLFING WORLD IS A CHALLENGING SERIES OF INTER-RELATED GAMES: HANDICAP GOLF; THE CLUB CHAMPIONSHIP; THE OPEN.

HANDICAP GOLF IS A ONE OR TWO PLAYER GAME PLAYED ON A RANDOMLY GENERATED COURSE MAKING EACH ROUND OF 18 HOLES DIFFERENT. COURSE FEATURES INCLUDE TREES, WAATER, BUNKERS, ROUGH AND OUT OF BOUNDS. EVERYONE STARTS WITH THE MAXIMUM HANDICAP OF 24 WHICH MEANS THAT YOU ARE EXPECTED TO COMPLETE THE COURSE IN 24 OVER PAR (PAR BEING THE EXPECTED NUMBER OF STROKES TO COMPLETE THE COURSE). WITH A HANDICAP OF 24 AND A COURSE PAR OF 72 YOU WILL BE EXPECTED TO COMPLETE THE COURSE IN 96 STROKES. IF YOU SCORE 90 THEN YOUR NEW HANDICAP WILL BE 90-72 OR 18. AS YOU ACHIEVE A NEW HANDICAP YOU WILL ALSO BE GIVEN A CODE NUMBER TO VALIDATE YOUR HANDICAP.

CLUB CHAMPIONSHIP CAN BE PLAYED WHEN YOU ACHIEVE A HANDICAP BELOW 12. THE CORRESPONDING CODE NUMBER WILL NEED TO BE ENTERED TO VERIFY THIS. THE CLUB CHAMPIONSHIP IS A ONE PLAYER GAME PLAYED AGAINST 7 STRONG CLUB PLAYERS AND IS PLAYED ON A SET COURSE MODELLED AFTER LYTHAM ST. ANNES.

THE OPEN IS THE FINAL CHALLENGE AD CAN BE ENTERED ONLY IF YOU WIN THE CLUB CHAMPIONSHIP. LIKE THE CLUB CHAMPIONSHIP IT IS A ONE PLAYER GAME BUT THIS IS PLAYED AGAINST 7 OF THE STRONGEST PLAYERS IN THE WORLD. AGAIN, IT IS PLAYED ON A SET COURSE MODELLED AFTER LYTHAM ST. ANNES.

THIS IS A DELIGHTFUL GOLF GAME THAT OFFERS A CHOICE OF 15 CLUBS WITH EASY DIRECTION INPUT BASED UPON THE 1 TO 12 OF A CLOCK FACE. ONCE ON THE GREEN A CADDY WILL REMOVE THE FLAG STICK AND YOUR SCORECARD WILL BE DISPLAYED UPON COMPLETION OF EACH HOLE.

AT THE MOMENT, GOLFING WORLD IS AVAILABLE FROM ENGLAND, BUT IF YOU ARE INTERESTED IN OBTAINING THE SOFTWARE, CONTACT G. RUSSELL ELECTRONICS, CENTRE HALL, PENNSYLVANIA. THEY ARE CONTEMPLATING CARRYING UTILITIES AND OTHER UNIQUE SPECTRUM SOFTWARE IF ENOUGH INTEREST IS SHOWN.

A N O T H E R U S E

DENNIS J..KRILL

SOME OF US HAVE HAD A LOT OF FUN ADAPTING PROGRAMS FOR OUR SPECIFIC USES OR EVEN CREATING A USE FOR A PROGRAM WHICH WAS NOT INTENDED BY THE AUTHOR. THIS ARTICLE IS AN EXAMPLE OF THAT ACTIVITY.

IN A PREVIOUS ISSUE OF SYNAPSE, I DEMONSTRATED A PROGRAM THAT MADE CASSETTE (OR DISK) LABELS COMPLETE WITH CENTERING AND BORDER. WITH JUST A FEW MINOR MODIFICATIONS IT CAN BE USED TO MAKE "ARTICLE TITLE BLOCKS" LIKE THAT AT THE HEAD OF THIS ARTICLE AND OTHERS IN THIS ISSUE.

FIRST LOAD THE "LABEL MAKER" PROGRAM AND THEN BREAK IT. AT LINES 340, 350, 360, 370 AND 380 CHANGE THE GRAPHIC CHARACTERS TO WHATEVER YOU DESIRE. SINCE YOU CAN MAKE USE OF PUNCTUATION, INVERSE LETTERS AND GRAPHIC CHARACTERS YOUR BORDERS CAN BE AS ORIGINAL AS YOU ARE CREATIVE. I GUARANTEE THAT EXPERIMENTATION CAN BE VERY SATISFYING.

WHEN YOU HAVE A TITLE BLOCK YOU LIKE DUMPED TO YOUR PRINTER, LOAD YOUR FAVORITE WORD PROCESSING PROGRAM AND TYPE AWAY.

Personal classified ad:

WANTED: TS1000/ZX81, Memote 64k memory pack, Memotech word processor, Centronics parallel printer interface (ts1000), new or used. Robert Heil, 1525 N. Ashwicken Ct., State College, Pa. 16801

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1605 Pennsylvania Ave.
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Miami Beach, Florida
33139

DREAMING OF RUNNING SPECTRUM SOFTWARE ON YOUR TS2068 ?

Now you can with

ROMSWITCH

WHAT IS ROMSWITCH AND WHAT WILL IT DO FOR ME? ROMSWITCH is a small electronic device that expands your TS2068 computer operating system so you can run your regular TS2068 programs plus most of the thousands of available British Sinclair ZX SPECTRUM programs.

HOW DOES ROMSWITCH WORK? It lets you switch between the TS2068 ROM in your computer and an issue #3 SPECTRUM ROM contained on the ROMSWITCH board. You select the ROM with an externally operated magnet switch you affix to your keyboard.

WHERE DOES ROMSWITCH "GO"? It mounts permanently inside your computer, freeing the edge connector and cartridge port for other applications.

HOW DO I INSTALL ROMSWITCH? SIMPLY! First open your computer. Then you remove the TS2068 ROM and plug it into the ROMSWITCH board. Next plug the board into the TS2068 ROM socket. After closing your computer, you place the external selector switch on the upper right hand area of the keyboard panel. The selector switch has a press-on adhesive back to hold it permanently in place. (To remove, reverse the procedure.)

IS INSTALLATION COMPLICATED OR RISKY? NOT AT ALL! Average time is 15 minutes or less. Detailed instructions outline each step. You need only two screwdrivers-- a Philips to open the computer case and a flat tip to remove the ROM. Chances of accidental damage are quite small. The few necessary precautions are clearly outlined in the installation instructions.

MUST I SOLDER ANYTHING, DRILL ANYTHING OR RUN WIRES? No soldering, drilling, cutting, snipping or running wires is required. It really is simple.

DOES OPENING MY COMPUTER INVALIDATE MY WARRANTY? Yes, your 90 day warranty (or 1 year warranty if you purchased an extended policy) is invalidated. But you can still get repair service from TIMEX at reasonable cost anytime your computer requires. See page #V1 of your manual for service information.

IS ROMSWITCH THE SAME AS THE EMULATOR OR CHAMELEON? No. The Emulator or Chameleon plugs into the TS2068 cartridge port costs more than ROMSWITCH. If you forget to turn off your computer when inserting or removing the Emulator, you may damage it or your computer. The advantage is that you do not install it inside your computer. The Emulator is available from Enterlingua, 206 James St., Carrboro, NC 27510.

ARE THERE ANY OTHER ALTERNATIVES TO ROMSWITCH? You may purchase a SPECTRUM ROM. It is installed inside your computer in place of your TS2068 ROM. Each time you switch from SPECTRUM to TS2068 you must take your computer apart and switch ROMS. The advantage is lower cost.
Available from Phoenix Enterprises, 1780 N. Dupont Hwy., Dover, DE 19901.

WILL I HAVE ANY PROBLEMS LOADING SPECTRUM CASSETTES INTO MY TS2068 IN SPECTRUM MODE? No. Well recorded SPECTRUM cassettes are no more difficult to load than well recorded TS2068 cassettds. NOTE: WINKY 2000 cassette-computer interface solves most loading problems for TS2068 and SPECTRUM computers.

IS THE QUALITY AND QUANTITY OF SPECTRUM CASSETTE PROGRAMS WORTH WHILE? YES! There are thousands of British SPECTRUM cassette programs available. Many of these are very impressive.

WHERE CAN I PURCHASE SPECTRUM PROGRAMS? Many US dealers, including Games to Learn by, Sunset Electronics, Hawg Wild Software, Phoenix. Russell Electronics is also planning to carry SPECTRUM programs.

ROMSWITCH (ROMSWITCH board, external selector switch, full directions) price is only $54.95 with shipping included by UPS or US Mail. Send check, money order, MasterCard/Visa # to RUSSELL ELECTRONICS, RD1 Box 539a, Centre Hall, PA 16828, phone 814-364-1325 except Sun. 10 am--8 pm.

FINDING SPECTRUM SOFTWARE

Some of the best home computer software is written for the British SINCLAIR ZX SPECTRUM. The range and quality is most impressive, and it seems to improve every month. Fortunately, we can run most SPECTRUM programs on our TS2068 computers if equipped with a ROMSWITCH unit or other device to provide the SPECTRUM operating system.

There are two ways to buy SPECTRUM cassette programs. One is to send directly to the supplier in England. Their addresses are available from British ZX publications. Multiply the £ price by $1.25 at present and include one £ for shipping and handling. Ask for air parcel post service.

Or, you may now get it from U.S. dealers such as GAMES TO LEARN BY, POBX 78, Collinsville, CT 06022. Or PHOENIX ENTERPRISES, 1780 N. DuPont Hwy.,No.17, Dover, DE 19901. Or SUNSET ELECTRONICS, 2254 Taraval a t., San Francisco, CA 94116. Watch SYNCWARE NEWS and TS HORIZONS magazines for more dealers advertisements.

G.RUSSELL ELECTRONICS will also be offering unusual utility and game program cassettes. Look for the ad in the next SYNAPSE.

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PECTEXT
McGRAW-HILL book company (UK)
****

Want to know how a book company saves money? They put the instructions for their word processing software in the program and not in print! It is then up to you, the user, to print out and assemble the nine (9) pages of documentation text.

Most of you are aware by now that I've reviewed a number of quite different word processors for both the 1000 and 2068 systems and that I've developed some opinions on what is excellent and what is schlock (i.e. garbage or difficult to use). This one falls in between that rather broad spectrum (no pun intended) and, in my estimation, at the lower end!

To begin with, the name of the program is SPECTEXT and not as printed at the header of this review. I'll never know why the "S" is missing since it is clearly on the screen. I see it as I am typing but it does not show on the printout. It's rather confusing.

But my ire is causing me to get ahead of myself.

SPECTEXT is a word processor written for the SPECTURM. The published documentation is scanty to say the least. However, detailed instructions are available upon loading two text files that are included on side two of the cassette.

SPECTEXT uses the embedded text system for formatting the printed result. I usually enjoy such a method, but in this case I feel accessing the embedded characters is far more difficult than is necessary. WORD SINC II is far more forgiving in that aspect.

As far as I can tell, this program does not allow for CAPS LOCK. Where ever you see a series of upper case in this review, I had to press the CAPS LOCK for each keystroke.

Typing speed, on the other hand is a significant plus!!! I can type at a rate of 80 words per minute. That speed has been a problem with other word processors in that I had to reduce my speed in order to allow the program to keep up with me. The keyboard reading routine in SPECTEXT is extremely quick and that aspect gave me sincere pleasure.

Also a plus are the global editing and replace features. Making use of that technique allows for form letters that will seem more personalized. For instance, the name Smith can be changed to Jones at all positions in the text. That's just one use and I am sure there are more.

Also available is a MOVE feature that allows up to 640 characters (one 20 x 32 screen) to be relocated or inserted as often as needed.

SPECTEXT will hold up to 16483 characters. That works out to roughly 25 1/2 screens of text. Unfortunately, there is no indication of how much space is left during the typing stage. A program that can do so much should be able to display a constant "space remaining" report.

Along with SPECTEXT comes SPECFILE (a data filing program that offers user formatting), SPECMERGE (with this you can merge data from SPECFILE with a letter from SPECTEXT and print out as many form letters as you need) and PRINTMOD (allows for connection of a full-size printer - the software is set up for a SILVER-REED EX44 typewriter with I/F44 interface).

All in all, SPECTEXT is a decent program, and if you feel you really need to run a SPECTRUM program on your SPECTRUM modified TS2068, then by all means try to obtain a copy. It is worthwhile if only for the ability to merge text and address files for form letters.

Dennis J. Krill

Personal Classified ad

WANTED: Timex/Sinclair 1510 'T' Dock cartridge player and cartridges for the T/S 1000/1500. Also wanted, Sinclair ZX80 and ZX81 and a Silver T/S 2040 printer (must be Silver) Will take new or good working used of all the above. Stan Light 810 Mammot Rd. Alden, NY 14004.

ACCOUNT BALANCE

DENNIS J. KRILL

THE OTHER DAY, WHILE RELAXING IN FRONT OF MY T/S 1500, MY WIFE BROUGHT TO MY ATTENTION THE STATUS OF OUR CREDIT CARD ACCOUNT. ALTHOUGH SHE WAS NOT SURPRISED BY THE AMOUNT I HAD ACCUMULATED -- THANK CLIVE SHE UNDERSTANDS THAT I AM TRYING TO ACQUIRE ITEMS WHILE THEY ARE STILL AVAILABLE -- SHE QUESTIONED THE AMOUNT STILL OWED.

SO I LOOKED OVER THE "COMPUTER PRINTOUT" OF OUR ACCOUNT. TO SAY THE LEAST, THE SITUATION WAS CONFUSING.

"WAIT A MINUTE", I THOUGHT TO MYSELF, "I SHOULD BE ABLE TO WRITE A PROGRAM TO MAKE THESE NUMBERS UNDERSTANDABLE".

WELL, I DID JUST THAT, AND ALTHOUGH THE FINAL RESULT VERIFIED THE CHARGE CARD REPORT, OUR MINDS WERE PUT AT EASE.

TO OPERATE THE PROGRAM, JUST FOLLOW THE SCREEN PROMPTS. THINK OF INTEREST ON THE AMOUNT REMAINING AS ANOTHER CHARGE (IT REALLY IS JUST THAT) AND PLACE A NUMBER BESIDE EACH ENTRY ON THE SHEET THAT COMES WITH YOUR MONTHLY STATEMENT (IF IT IS NOT ALREADY THERE). THAT WAY YOU WILL BE ABLE TO INPUT THE PROPER NUMBER WHEN THE FIRST SCREEN PROMPT APPEARS.

IN ORDER TO HAVE TIME TO WRITE DOWN THE AMOUNT CHARGED (CALCULATED BY THE PROGRAM) AND VERIFY THE STATEMENT, I PLACED A 4+ SECOND DELAY AT LINE 140. IF THAT SEEMS TOO LONG OR TOO SHORT FOR YOU, CHANGE THE 200 TO WHATEVER SUITS YOU.

FOR THOSE WHO MIGHT FIND THE NEED TO EXPAND UPON "BALANCE", HERE IS A LIST OF VARIABLES USED AND THEIR DEFINITION:

C = CHARGES
D = DELAY
M = ACCUMULATED PAYMENTS
P = PAYMENTS (INDIVIDUAL)
Q = QUANTITY OF CHARGES
R = RESULT
S = TOTAL MONEY SENT
T = TOTAL CHARGES
X = NUMBER OF CHARGE / PAYMENT
Z = ACCUMULATED CHARGES

LISTING EXPLANATION

LINES 2 TO 145 - INITIALIZE AND INPUT CHARGES TO THE ACCOUNT

LINES 200 TO 255 - INPUT ALL PAYMENTS MADE TO THE ACCOUNT

LINES 300 TO 310 - RECONCILE AND VERIFY THE STATEMENT

```
  2 LET M=0
  5 LET Z=0
 10 PRINT "HOW MANY CHARGES?"
 15 INPUT Q
 20 CLS
 25 FOR X=1 TO Q
100 REM CHARGES
105 PRINT AT 2,0;"CHARGE NO. ";
X
110 INPUT C
115 LET T=C+Z
120 LET Z=T
125 NEXT X
130 PRINT "TOTAL CHARGES = $";Z
140 FOR D=1 TO 200
145 NEXT D
200 CLS
205 PRINT AT 2,0;"HOW MANY PAYM
ENTS?"
210 INPUT Q
215 CLS
220 FOR X=1 TO Q
225 REM PAYMENTS
230 PRINT AT 2,0;"PAYMENT NO. "
;X
235 INPUT P
240 LET S=P+M
245 LET M=S
250 NEXT X
255 PRINT "TOTAL PAYMENTS = $";
M
300 REM RECONCILE
305 LET R=Z-M
310 PRINT "TOTAL TO BE PAID = $
";R
500 STOP
```

AS WITH ANY PROGRAM, BECOMING ACCLIMATED TO ITS OPERATION USUALLY CAUSES THE DISCOVERY OF OTHER APPLICATIONS. "BALANCE" CAN BE UTILIZED WHENEVER ACCOUNT VERIFICATION IS DESIRED. GRANTED, IT IS NOT AS POLISHED AS THE COMMERCIALLY AVAILABLE CHECKBOOK PROGRAMS. HOWEVER, IT DOES PERFORM THE SIMPLE CALCULATIONS NECESSARY. AND IT IS MORE FUN TO USE THE COMPUTER THAN A CALCULATOR.

Advertising rates as follows:

1/8 page	= $7.00
1/4 page	= $10.00
1/2 page	= $18.00
full pg.	= $30.00

Classified ads are $1.00 / line of 32 characters
Free personal ads to members 2 lines of 32 character each

Subscription rates as follows: $12.00 per year.
Back issues are available: $1.25 per issue.

Make checks payable to Robert Neil, editor
Mail your check, along with a copy of the form below, to:
Robert Neil, editor
1525 N. Ashwicken Ct.
State College, Pa. 16801

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